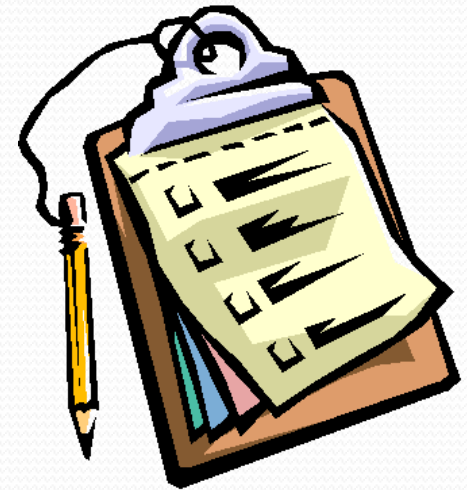


Natronix Semiconductor Technology

Defining The Future Through Partnerships

Corporate Presentation

1. About Us
2. Business Units
3. Customers
4. Quality
5. Markets & Applications
6. Team
7. Value Proposition





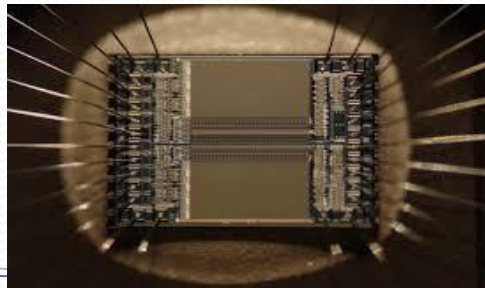
The Valingro Group builds Businesses that transcends time

Presence in Semiconductor Packaging & Design, IC Test Engineering, Engineering & Consultancy, Enterprise IT, Trading & Farming, Skills Training

Valingro's Mission is "Perfecting & Growing global deliveries while promoting a Values' based Society"

Natronix is a member of the Valingro Group

- Headquartered in Singapore ; Privately held
- Promoted by experienced Semiconductor Professionals
- Providing OSAT (Outsourced Semiconductor Assembly & Test) & Design services focusing on complex solutions to global Semiconductor companies
- Resounding Vision to be one-stop solution for Customers'
Semiconductor needs from Design to Package Assembly & Test
- N-Sg Promoters hold 60% of SPEL-India shares, planned further acquisitions of OSATs across APAC, Japan & USA



Vision

To be the **Natural Destination** for Global Customers seeking cost-effective OSAT & Design services.



Mission

Achieve Zero defect, Just-in-time, Cost-effective solutions with Service that is uncompromised.

Our Partners → Customers, Suppliers, Employees & Shareholders are confident in the knowledge that we are consistently meeting and exceeding their expectations.

Values

1. Business Ethics - defines us as a Company
2. Professionalism - defines us as Individuals
3. Citizenship - defines our contribution to Society



Corporate Objectives

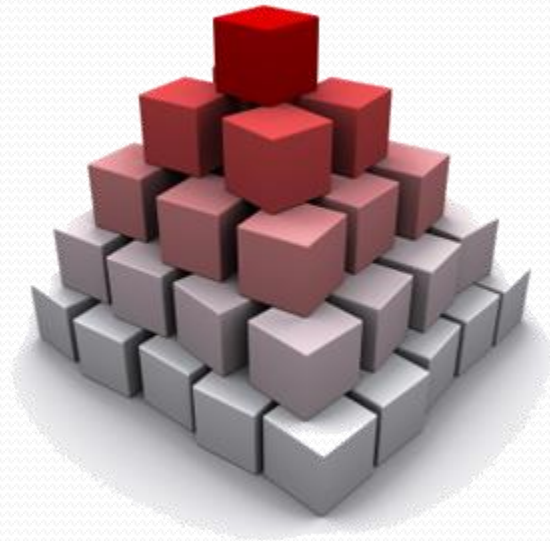
1. Profit - earnings that enable achieving our other 4 objectives
2. Client satisfaction
3. Competence
4. Employee satisfaction
5. Growth



- Introduction
- Business Units

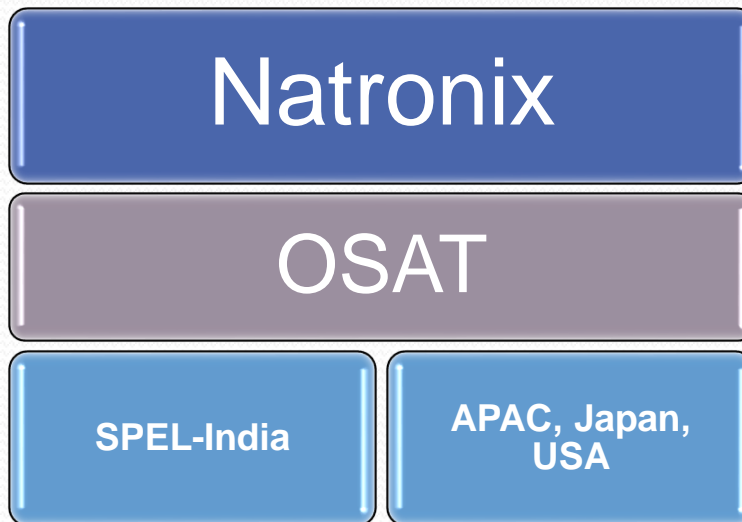
1. OSAT

- a. SPEL-India
- b. Acquisitions – APAC, Japan, USA



Business Units

Natronix has 2 Business Units – OSAT



OSAT

- Three decades of experience in OSAT Industry
- Acquired 60% shares in SPEL-India, a major OSAT Company in India
- Planning strategic OSAT acquisitions in APAC, Japan, USA to have a global footprint & presence in all major Semiconductor Ecosystems

- SPEL-India is a IC Assembly & Test Company located in Chennai, India
- India's first OSAT company & 100% export oriented
- Global Customers across US, Europe, India & APAC inclusive of Companies within Top 10 Semiconductor ranking
- Established Customers serving wide range of application segments like 3Cs, Automotive, Medical, Industrial, Military & Aerospace
- ISO 9001, ISO 14001, IATF 16949





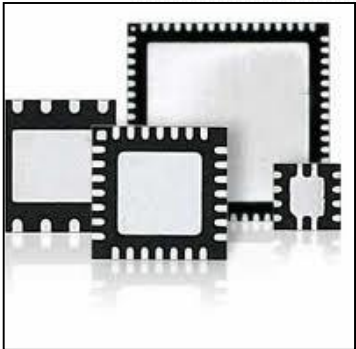

Full Turnkey

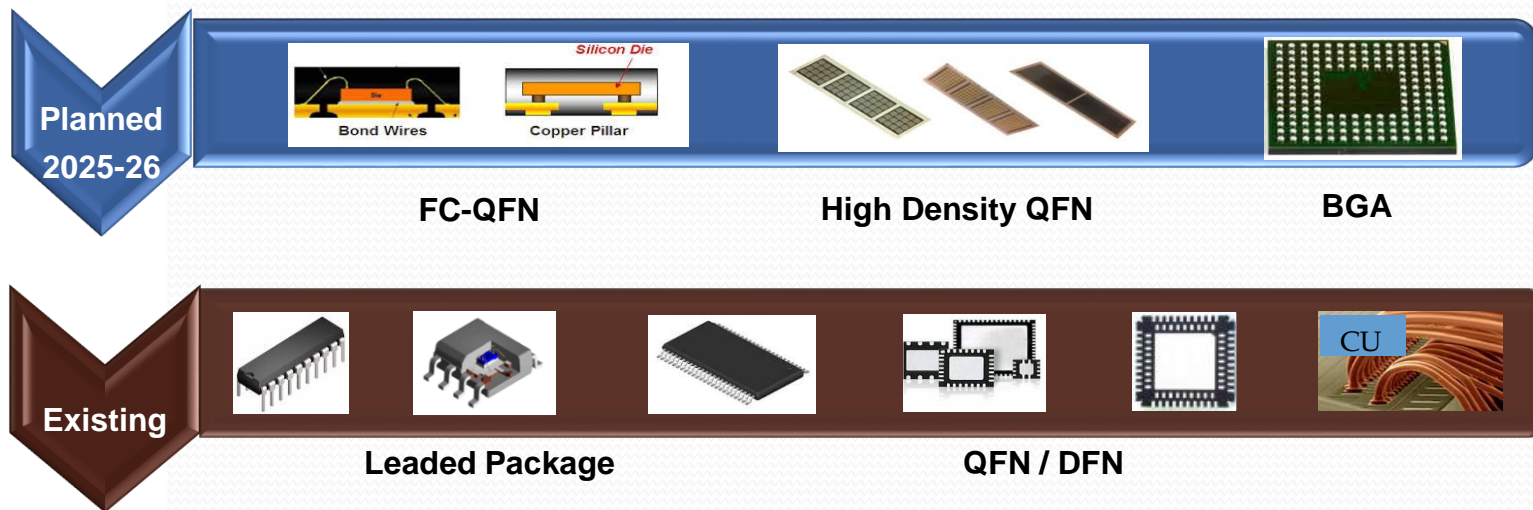
- 8inch capability
- Assembly
- Leaded SMD & QFN
- Testing
- Digital, Analog, Power & Mixed Signal
- Packing
- Tube, Reel & Tray
- Die Bank (N2 purged)
- 12inch wafer capability from Die attach
- ROHS Compliant & Green Packages
- Smallest Package – 0.6 x 1.0 x 0.4
- Consigned Testers option



Value Added

- Package Design
- Custom QFN packages
- Lead frame design
- QFN & Leaded etch tools
- FA & Reliability
- Test Program Development
- Product Characterization
- Drop shipments
- Bonding Diagram creation
- In-house etch lead-frame Design capability
- New Package Tooling
- Assembly & Test Yield reporting
- DOE / Wire-bond Characterization

QFN Capability		Process	Package Thickness	Body Size in mm	Lead-Pitch	Lead-Count
		Saw Singulated QFN / DFN	0.40 mm 0.50 mm 0.75 mm 0.90 mm	0.6 x 1 to 12 x 12	0.40 mm 0.50 mm 0.65 mm	2~ 100 pins
Leaded	PACKAGE 150 MIL ; 300 MIL SOIC 150 MIL QSOP ; VSOP 173 MIL TSSOP 150 MIL MILLIPAQ 300 MIL PDIP 225 MIL SIP	LEAD COUNT 7/8/14/16; 16/20 16/20/24/28; 40/48 8/20/24/38 80 8/14/16 8	JEDEC STANDARD MS-012 ; MS-013 MS-137 ; MS-154 MO-153 MO-154 MS-001 NA			
Test Platforms		TEST PLATFORM	Credence ASL 1000	Eagle ETS 364 / 88	V50	
		DIGITAL	✓	✓	✓	
		MIXED SIGNAL	✓	✓	✓	
		ANALOG	✓	✓		



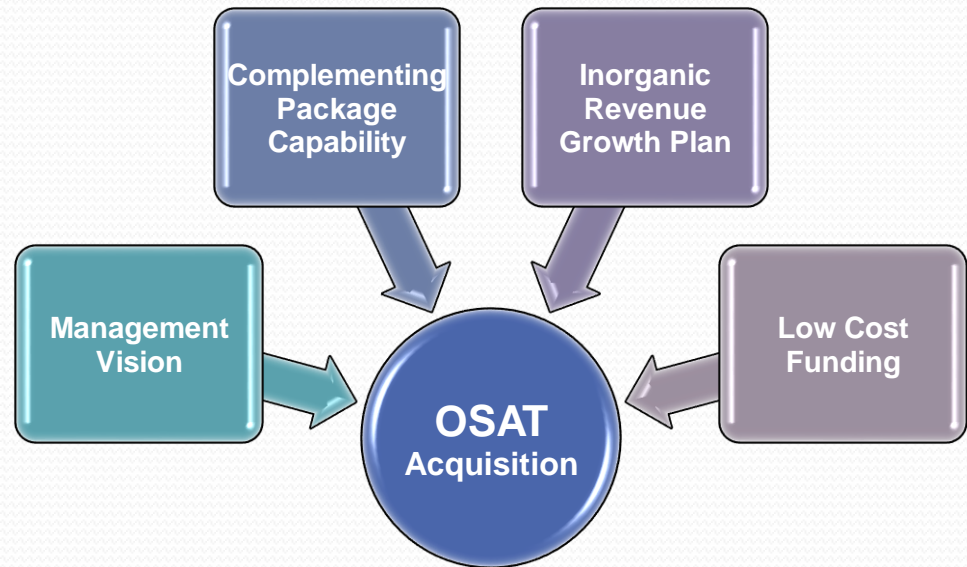
Package Category	Capacity / Month (Mln Units)	Remarks
Leaded	1.7	20 lead Equivalent
QFN / DFN	3.3	3 Sq. mm Equivalent

32% of Total Capacity is available for Copper Bonding

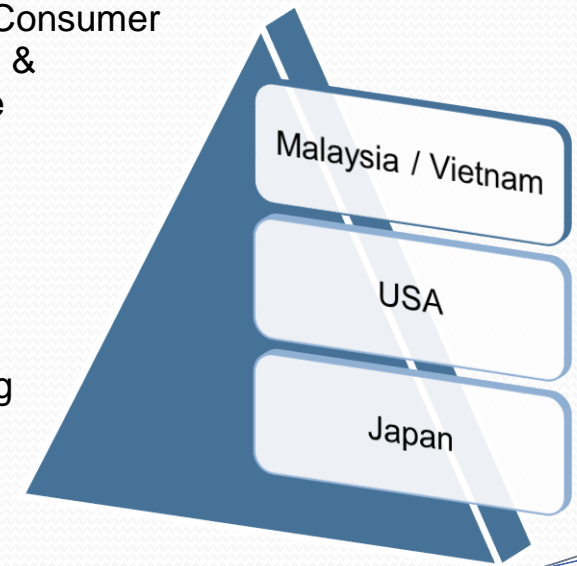
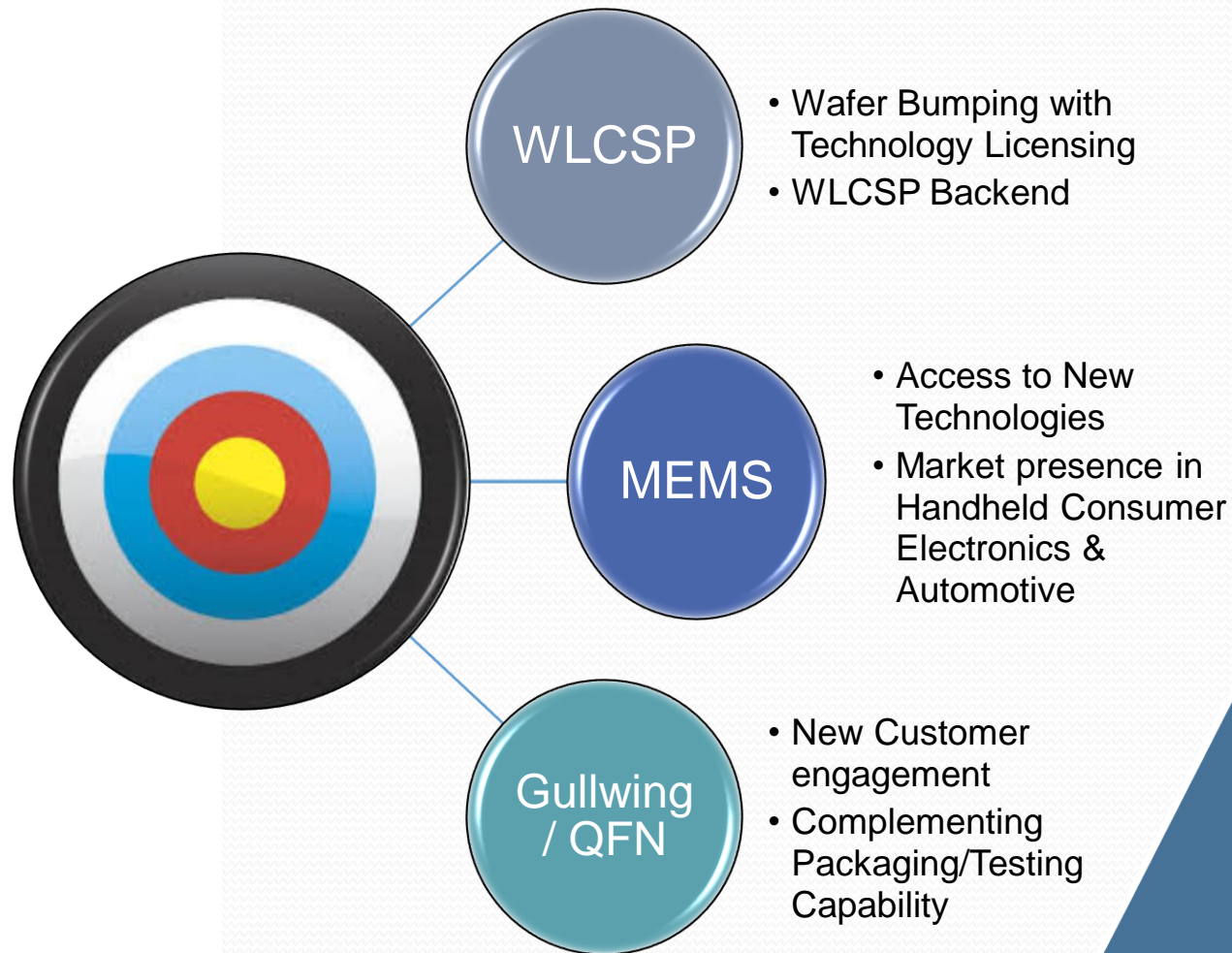
Natronix – Global OSAT Company

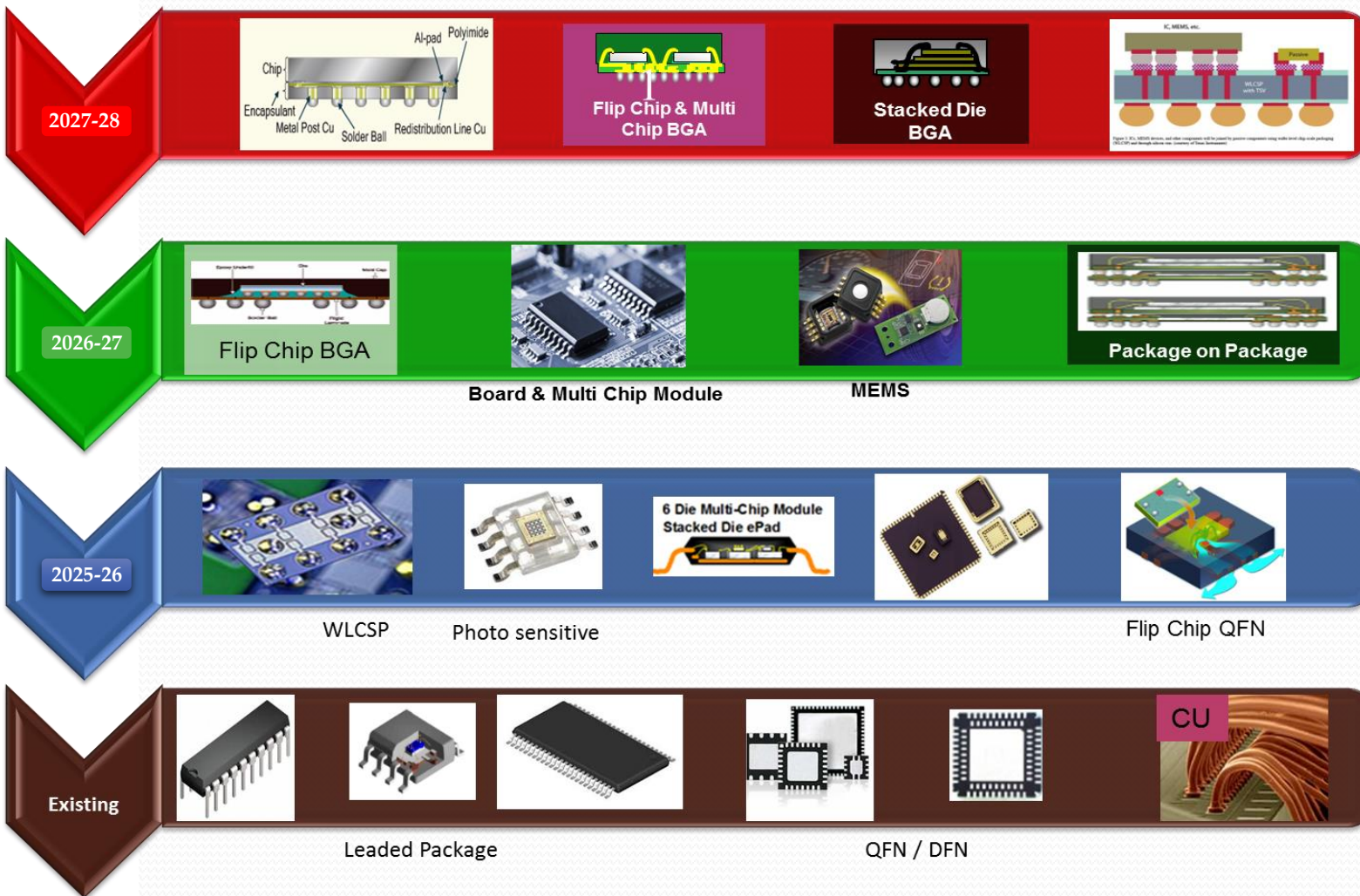
Natronix expects to achieve the following through Acquisition of existing OSAT Companies in APAC, Japan, USA

1. New Packaging Technologies like Wafer Bumping, WLCSP, BGA & MEMS
2. Quick Revenue Scaling
3. New Customer wins
4. Existence in Major Semiconductor Ecosystems



OSAT Acquisition Goals





Natronix

Customers

SPEL

THAT Corporation
Making Good Sound Better®

RENESAS **HMT**
microelectronic AG

**DEVICE
ENGINEERING
INCORPORATED**

TopLine® **SYRMA
SGS**

NVE
NVE CORPORATION

TE
connectivity

RF MICRON

IC LOGIC
MICROCHIPS

KOA

**ADVANCED
LINEAR
DEVICES, INC.**

MICROCHIP

LSI/CSI
a Semiconductor Company

KOA
KOA SPEER ELECTRONICS, INC.

MICRODUL
Customized Swiss Microelectronics

**SERMA
GROUP**

**kinetic
technologies**

HOLT
INTEGRATED CIRCUITS

ON Semiconductor®

ON

JVD

GStek



SENSONIX

**MSi
TEC**

Microelectronics
CORPORATION

**data
delay
devices, inc.**

iSino

AEMICS
smart products

TIMKEN

VISHAY



Littelfuse®

Key Design

SILTERRA

TT Electronics

E.K.S.S. Microelectronics Ltd
Operating your Silicon to Success

bruco
INTEGRATED CIRCUITS

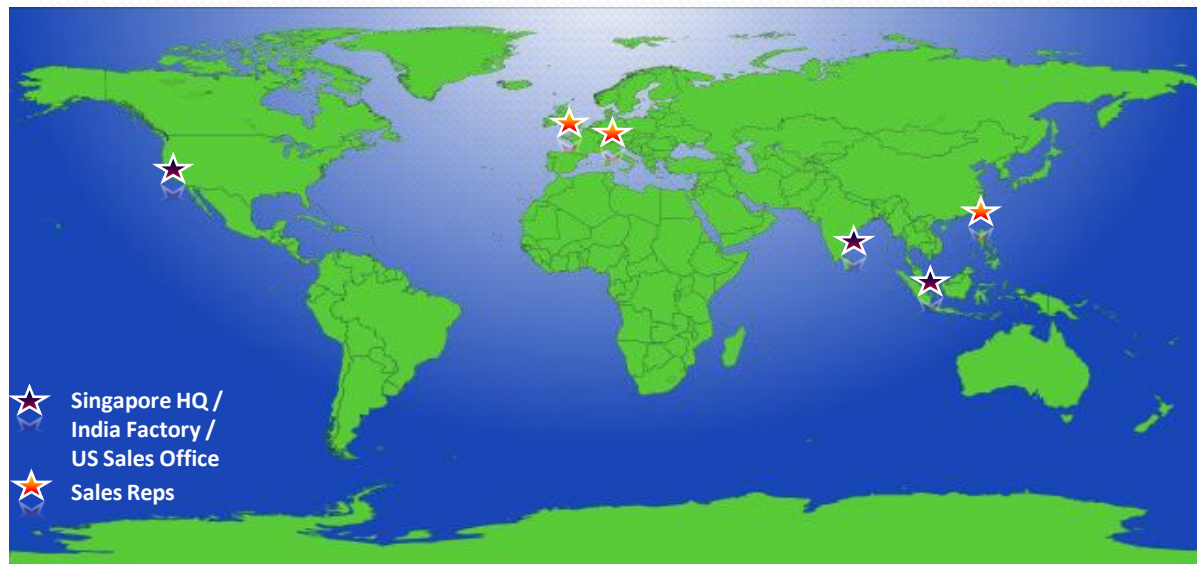
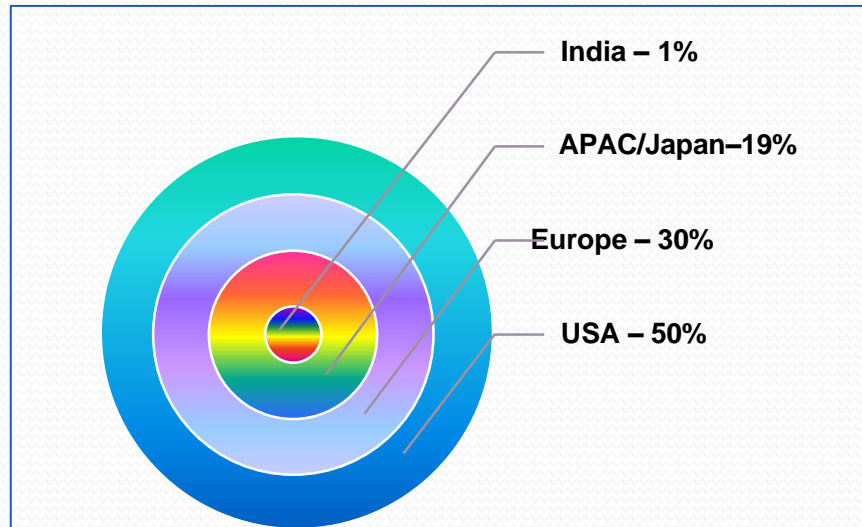
meticom

NOVA

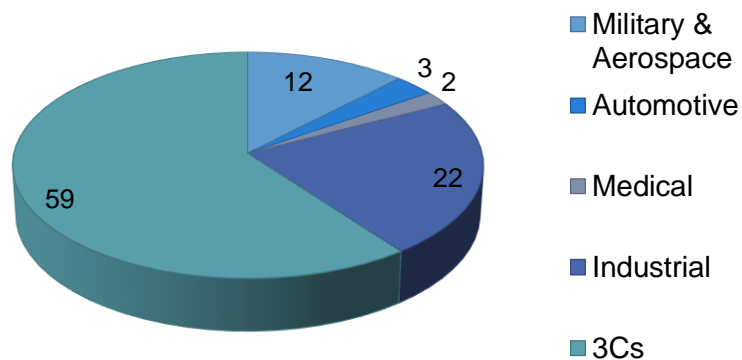
- Our Quality consciousness starts from incoming material and follows through process until device reliability in final application
- The robust in-house Quality control procedures ensures excellent Assembly Yield and no field failures
- Have the following Quality Certifications :
 - ✓ ISO 9001:2015
 - ✓ ISO 14001:2015
 - ✓ IATF 16949:2016



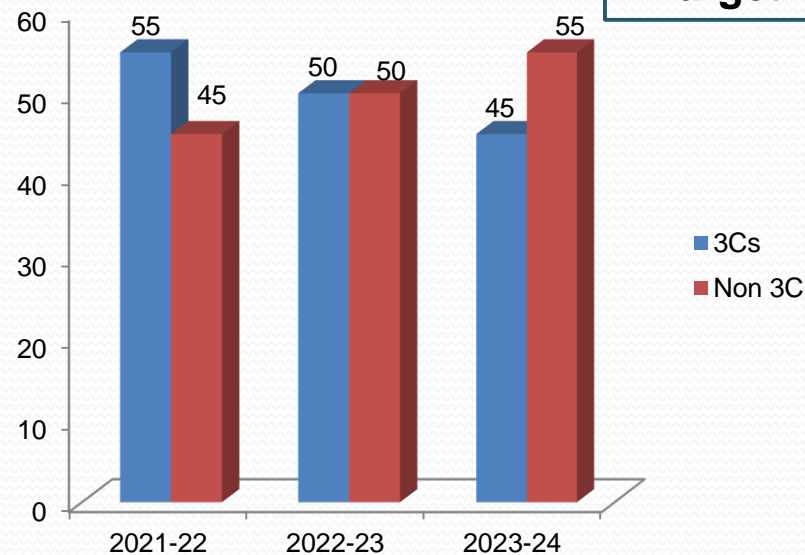
Customers by Region



Current



Target



3Cs – Computing, Communications & Consumer Electronics

- Design Engineers with wide Domain expertise & experience
- Technically qualified Operators & Technicians
- Skilled engineers & experienced Management
- Low attrition rate (< 6%). Developed second-in-line in all Functions starting from Supervisor levels
- Strong engineering database ensures that any attrition will not affect any process
- Over 55% of the Employees have over 15 years of service
- Low direct labor cost & Management provides various Employee welfare schemes as a motivational activity through Employee Welfare Committee
- Training Cell providing comprehensive training (including Customer Loyalty & Soft-skills) to all levels, at regular intervals & conducts tests to ensure capability
- Talent pool available from Local universities with electronics/semiconductor background



Hiring

- Procedures & processes ensure recruitment & deployment of people right mix
- We are an equal opportunity Employer
- All recruitment decisions are made on basis of merit only

Training & Development

- Aligning skills of people with current job needs
- Developing people for enhanced future roles through training
- Aim to enable our people to acquire right skills & attributes

Retaining / Career growth

- Policies at our organization aim to attract, motivate, recognize and retain professional staff members
- Internal equity, market competitiveness and high performance are 3 fundamental principles of our remuneration policies
- Performance management system helps individuals in investing their efforts in right direction

- The organization constantly reviews the environmental policy, environmental management programs, adheres to various environmental regulations and works toward continual improvement of the Environment Management system in all its manufacturing locations.
- The management and employees are committed to prevent and abate pollution and adopt various control measures in conserving energy and all natural resources.
- SPEL's manufacturing location is surrounded by more than 1,000 trees, abundant greenery including plants, lawns, vegetation area for in-house consumption.
- ROHS (Restriction of Hazardous Substances) compliance as per EU directive, effective from July 01, 2006
- Molding - using Green Compounds
- Plating of Terminals - 100% Pb-Free matte Sn plating or NiPdAu finish



S-E-C is primarily done by One-to-One Mentoring as each person encourages & motivates the other, towards a more purposeful & effective lifestyle. Towards this, there are 3 areas that each of us can assist by making these a part of our day to day approach :

1. Following discipline in any and everything we do
2. Providing a helping hand to people around us in any way we possibly can
3. Showing the right path forward to people around



1. Growth established in Lead-frame based OSAT

- a. Continuous increase in Revenue and Volume
- b. Instrumental in bringing Technology driven products like QFN
- c. Instrumental in bringing Kaizen, 5S, Lean Manufacturing Concept

2. Competing Globally

Company has spread their service beyond USA. Customers are spread in APAC, Europe and Japan

3. Track record

Track record has been established with all.

- Customer Satisfaction
- Vendors
- Employees
- Bank
- QCDS factors



4. Having required Base to Grow Beyond

With the relationship that been established with Stakeholders – Customers, Vendors, Investors & Employee, Promoter can take the company to greater heights

- Focused Customer solutions and partnerships
- Provides lead frame design, drop shipment, material selection solutions to Customers
- Excellence in Time to market & Low cost products
- On Time Delivery is 98% & lowest cost than Taiwan market
- Absolute Quality assurance
- Zero Customer returns, Zero field failures
- Streamlined manufacturing process
- Assembly line in universal standard
- Hard working & talented work force
- 20+ years experience & 55% force is with SPEL for more than 15 years
- Established Infrastructure & proven track record
- Well equipped assembly line with power back up
- 100% Customer Satisfaction
- More than 3 decades experience in OSAT business
- Global Company provides complete solution in Package Assembly/Test & Chip Design



- **Internal / external inspection**
 - High / low power microscope
- **X-RAY**
- **Decapsulation**
 - Niesene
- **Open / short test**
- **85% / 85°C moisture soak**
- **Environmental Test Chamber**
- **Temperature cycle**
 - ENVIRO SYSTEM chamber
- **HTOL Test Chamber**
- **Reflow Oven**
- **CrateringTest**

Final Testers		
Tester Name	Manufacturer	Model
TMT	TMT inc	ASL1000
TMT	Credence	ASL1000
ETS3	Teradyne	ETS364
ETS4	Teradyne	ETS364
ETS	Teradyne	ETS88
MCT	MCT	MCT 2010
HANDLERS		
Handler	Manufacturer	Model
H-18	Micro Comp Tech	MCT3608E
H-49	Micro Comp Tech	MCT5105
H-51	Micro Comp Tech	MCT5105
H-29	Multitest	8704
H-36	Sessco	Gravity
H-55	SRM	XD248
H-56	SRM	XD248
H-42	TeSsec Mapper	3270-H

	Singapore	USA	Europe	India
Name	Mrs. R.Yogeshwari	Mr. N.J.Chandrasekar	Mr. G.Natarajan	Mrs. V.Sivaramalakshmi
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